

What is claimed is:

1. A manufacturing managing method comprising, as a basic managing pattern, the steps of:

5       designating each manufacturing lot containing at least one workpiece as a main objective to be managed; and

loading an appropriate number of manufacturing lots on a carrier so as to cause said workpieces contained in respective manufacturing lots to pass along a plurality of manufacturing process flows.

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2. A manufacturing managing method comprising, as a basic managing pattern, the steps of:

designating each manufacturing lot containing at least one workpiece as a main objective to be managed;

15       loading an appropriate number of similar type manufacturing lots on a carrier, said similar type manufacturing lots containing workpieces having the same work conditions in at least one work step; and

transporting said carrier to a batch apparatus that performs simultaneous processing or machining operation applied to said workpieces or to an apparatus that brings said workpieces into an in-process work step under the same conditions, so as to cause said workpieces contained in respective similar type manufacturing lots to pass along a plurality of manufacturing process flows.

25       3. The manufacturing managing method in accordance with claim 2, further comprising a step of making a judgment before starting the in-process work step in said apparatus as to whether or not said workpieces contained in said plurality of lots should be loaded on said carrier.

30       4. The manufacturing managing method in accordance with claim 3,

further comprising a step of further loading additional workpieces of at least one lot on the carrier under a condition that the workpieces contained in said plurality of lots are already loaded on the carrier before said carrier is transported to an apparatus that has the capability of processing an increased  
5 number of workpieces.

5. The manufacturing managing method in accordance with claim 2, further comprising a step of making a judgment after finishing the in-process work step in said apparatus as to whether or not the workpieces  
10 of a predetermined number of lots should be unloaded from said carrier under a condition that the workpieces contained in said plurality of lots are loaded on said carrier.

6. The manufacturing managing method in accordance with claim 5,  
15 further comprising a step of unloading the workpieces of a specific lot beforehand when said specific lot cannot be processed together with other lots in the next manufacturing process flow.

7. The manufacturing managing method in accordance with claim 2,  
20 further comprising a step of unloading the workpieces of at least one specific lot under a condition that the workpieces contained in the plurality of lots are already loaded on said carrier and a step of loading required workpieces of another lots on said carrier, thereby repacking the workpieces on the carrier before starting the in-process work step in said apparatus.

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8. The manufacturing managing method in accordance with claim 2, further comprising a step of unlading part of workpieces in the same lot before starting the in-process work step in said apparatus in such a manner that an original lot number of each unloaded workpiece can be identified  
30 later from a condition that the workpieces contained in the plurality of lots

are loaded on said carrier, and a step of loading another workpieces of at least one new lot on said carrier.

5           9. The manufacturing managing method in accordance with claim 2, further comprising a step of temporarily stopping or decelerating said carrier at a mix-loading waiting point provided adjacent to said apparatus and a step of make a judgment as to whether or not the workpiece contained in the plurality of lots are loadable on said carrier.

10           10. The manufacturing managing method in accordance with claim 2, wherein said apparatus restricts the loading of workpieces contained in a plurality of lots onto said carrier.

15           11. The manufacturing managing method in accordance with claim 2, wherein the loading of workpieces contained in a plurality of lots onto said carrier is restricted based on at least either one of a product name and a fundamental process flow.

20           12. The manufacturing managing method in accordance with claim 2, wherein the loading of workpieces contained in a plurality of lots onto said carrier is restricted based on a carrier type.

25           13. The manufacturing managing method in accordance with claim 1, wherein the workpieces contained in the plurality of lots and once loaded on said carrier are managed as a lot group not being easily separable.

30           14. The manufacturing managing method in accordance with claim 1, wherein a loading of workpieces onto said carrier by using a new lot is prohibited.

15. The manufacturing managing method in accordance with claim 8, wherein a specific lot is continuously loaded on the same carrier when unloading of said specific lot is prohibited beforehand.

5           16. The manufacturing managing method in accordance with claim 1, wherein a loading of workpieces contained in other lots is prohibited when a specific lot to be processed urgently is loaded on said carrier.

10           17. The manufacturing managing method in accordance with claim 1, wherein

in a case that an old system using a one-to-one relationship for managing the carrier and the manufacturing lot coexists with a new system using a 1-to-n (n is an integer not smaller than 1) relationship for managing the carrier and the manufacturing lot,

15           said manufacturing method comprises:

a step of assigning an original carrier number and an original lot number to one carrier and its lot in said old system and also assigning a pseudo carrier number and a pseudo lot number to other carrier and its lot, thereby realizing a dummy one-to-one management applied to the carrier  
20           and the manufacturing lot.

18. A manufacturing managing method comprising, as a basic managing pattern, the steps of:

designating each manufacturing lot containing at least one workpiece  
25           as a main objective to be managed;

loading an appropriate number of different type manufacturing lots on a carrier, said different type manufacturing lots containing workpieces having different work conditions; and

transporting said carrier to an apparatus that is capable of  
30           simultaneously bringing the workpieces into in-process work steps of

different conditions, so as to cause said workpieces contained in respective different type manufacturing lots to pass along a plurality of manufacturing process flows.

5           19. The manufacturing managing method in accordance with claim 18, further comprising a step of making a judgment before starting the in-process work step in said apparatus as to whether or not said workpieces contained in said plurality of lots should be loaded on said carrier.

10           20. The manufacturing managing method in accordance with claim 19, further comprising a step of further loading additional workpieces of at least one lot on the carrier under a condition that the workpieces contained in said plurality of lots are already loaded on the carrier before said carrier is transported to an apparatus that has the capability of processing an increased  
15 number of workpieces.

            21. The manufacturing managing method in accordance with claim 18, further comprising a step of making a judgment after finishing the in-process work step in said apparatus as to whether or not the workpieces  
20 of a predetermined number of lots should be unloaded from said carrier under a condition that the workpieces contained in said plurality of lots are loaded on said carrier.

            22. The manufacturing managing method in accordance with claim  
25 21, further comprising a step of unloading the workpieces of a specific lot beforehand when said specific lot cannot be processed together with other lots in the next manufacturing process flow.

            23. The manufacturing managing method in accordance with claim  
30 18, further comprising a step of unloading the workpieces of at least one

specific lot under a condition that the workpieces contained in the plurality of lots are already loaded on said carrier and a step of loading required workpieces of another lots on said carrier, thereby repacking the workpieces on the carrier before starting the in-process work step in said apparatus.

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24. The manufacturing managing method in accordance with claim 18, further comprising a step of unlading part of workpieces in the same lot before starting the in-process work step in said apparatus in such a manner that an original lot number of each unloaded workpiece can be identified  
10 later from a condition that the workpieces contained in the plurality of lots are loaded on said carrier, and a step of loading another workpieces of at least one new lot on said carrier.

25. The manufacturing managing method in accordance with claim  
15 18, further comprising a step of temporarily stopping or decelerating said carrier at a mix-loading waiting point provided adjacent to said apparatus and a step of make a judgment as to whether or not the workpiece contained in the plurality of lots are loadable on said carrier.

20 26. The manufacturing managing method in accordance with claim 18, wherein said apparatus restricts the loading of workpieces contained in a plurality of lots onto said carrier.

27. The manufacturing managing method in accordance with claim  
25 18, wherein the loading of workpieces contained in a plurality of lots onto said carrier is restricted based on at least either one of a product name and a fundamental process flow.

28. The manufacturing managing method in accordance with claim  
30 18, wherein the loading of workpieces contained in a plurality of lots onto

said carrier is restricted based on a carrier type.

29. The manufacturing managing method in accordance with claim  
24, wherein a specific lot is continuously loaded on the same carrier when  
5 unloading of said specific lot is prohibited beforehand.